

ABSTRACT

A method of and computer system for assisting GPS position determination is described. Ephemeris and updated almanac information for a GPS satellite is received over a datalink. Based on the received updated almanac information and GPS parity algorithms, data bits of the GPS signal are reconstructed. Based on the current time, the reconstructed data bits are synchronized with the time of reception of a GPS signal from a satellite currently in view. The reconstructed data bits are subtracted from the received GPS signal at the synchronized time. A coherent integration of the received GPS signal over the time period corresponding to the reconstructed data bits is performed to obtain a GPS pseudo-range measurement. The GPS receiver position is determined using the generated, synchronized pseudo-range measurement and the ephemeris information received over the datalink.